generally of an inexpensive kind, or else the damage was of a minor nature.

The tornado travelled a distance of about 40 miles, and its track was about one-fourth of a mile wide. No deaths or serious injuries resulted.

DESTRUCTIVE STORMS IN MICHIGAN.

By C. F. SCHNEIDER, Section Director. Dated May 29, 1909.

During the afternoon of Saturday, May 15, 1909, thunderstorms with high winds were general throughout southern Michigan, and a large amount of damage was done to buildings and trees. About 3:15 p. m. a destructive windstorm occurred at Fowlerville, Livingston County, and over the surrounding country for a distance of 2 to 4 miles. It is estimated that about two hundred and fifty buildings were more or less damaged, many being unroofed and several demolished. The total damage is estimated at about $50,000.

Three persons were injured by flying débris or being thrown to the ground by the wind, and as a result of fright one woman died from heart disease. About twenty-five families were rendered homeless.

The path of greatest destruction was about six rods wide and extended from southwest to northeast. One observer reports that the storm had a well defined funnel-shaped cloud, but the fact that uprooted trees lay in the same direction on all sides of its path, as reported by the same observer, would indicate that the storm was not a true tornado with rotary winds.

On the same date severe thunderstorms visited other points in southern Michigan, causing much damage to fruit trees and other property. At Cadillac one person was struck by lightning, and the power plant disabled at Flint. At Albion a tall chimney was blown down upon a church, causing $1,000 damage but no loss of life. At Eaton Rapids and vicinity the wind caused damage to the extent of $1,000.

CORRIGENDA.

In the MONTHLY WEATHER REVIEW, March, 1909, p. 103, col. 2. line 20 from the bottom, for "Berlin. 1875" read "Berlin, 1879;" on p. 104, col. 1, last entry, for "Lavel" read "Laval," in col. 2, line 2 from the bottom, for "1830" read "1880;" on p. 107, col. 1, for "Houdailles" read "Houdaille;" on p. 109. col. 1, for "Greeley" read "Greely."

THE WEATHER OF THE MONTH.

By Mr. P. C. DAY, Acting Chief, Climatological Division.

PRESSURE AND WINDS.

The distribution of the mean atmospheric pressure for May, 1909, over the United States and Canada is graphically shown in Chart VI, and the average values and departures from the normal are shown for each station in Tables I and III.

Barometric depressions of wide extent, central in the upper and lower Mississippi valleys during the closing days of April, moved, the former into Canada and the latter to the Atlantic seaboard, during the 1st and 2d.

Considerable depressions also covered the eastern districts from the 8th to 10th and again from the 25th to 27th, aside from which no depression of marked extent crossed the United States, although the month was one of generally low barometric pressure from the Rocky Mountains eastward, the departure from the normal averaging about −.05 inch over nearly all the above-named region. From the Rocky Mountain districts westward to the Pacific the pressure was comparatively high, the departure above the normal increasing to from +.05 to +.07 inch on the coasts of Washington and Oregon.

From April to May the mean pressure decreased in all portions of the United States and Canada, the amount ranging uniformly from about −.08 to −.14 inch.

Southerly winds were dominant over the Gulf States and Mississippi Valley, while under the influence of comparatively high barometric pressure on the Pacific coast the winds over the Plateau and Rocky Mountain districts were northwesterly and westerly.

Compared with the normal there was a general increase in the wind velocity in practically all districts, a few points only in the southern portion of the great Plains and in the Middle Plateau region showing wind movement slightly less than the average.

TEMPERATURE.

Following the low areas covering the eastern districts at the beginning of the month an extensive area of cold weather overspread the central valleys, moving eastward and southward during the 2d and 3d. Freezing temperatures and frosts occurred from central Texas northeastward to the lower Lakes with snow in the upper Lake region. During the following few days the temperature rose rapidly over all eastern districts, but cool weather continued over the northwestern and Mountain districts during most of the first decade. Cold weather again overspread the Mississippi Valley and eastern districts from the 10th to 13th, with frost in the Lake region, upper Ohio Valley, and in the interior and mountain portions of the Middle and North Atlantic States.

Generally cool weather was the rule during the 2d and 3d decades of the month, and as a whole the mean temperature for the month was below the normal in practically all portions of the United States, except over southern Florida and at a few points along the immediate Atlantic coast. The month was unusually cold over the Rocky Mountain and Plateau regions, and at its close the advance of the season had been seriously delayed thereby.

Maximum temperatures were not unusually high at any period during the month. They ranged from 80° to 90° over the eastern districts; from 90° to 97° over the central and southern portions of the Great Plains; and from 100° to 106° in the interior and lower valleys of Arizona and California.

Minimum temperatures were in many districts unusually low, especially over the regions west of the Rocky Mountains where severe frosts were of frequent occurrence, doing considerable damage to fruits, etc., but much less than would have been the case had not the development of vegetation been retarded by the continued cold weather preceding.

PRECIPITATION.

Rain in sufficient quantities and well distributed during the month occurred in all districts east of the Rocky Mountains, except over portions of the Middle Atlantic States, where there was a general lack of precipitation from the latter part of April until late in May. Over the greater part of Texas copious showers occurred, greatly relieving a serious drought that had prevailed over that State during the preceding months and which had given much concern to the cotton interests. West of the Rocky Mountains the month was one of generally deficient rainfall, especially so in portions of New Mexico, California, and the central portions of the Plateau region.

Rainfall was much above the normal amount over large sections of the middle Gulf States. In portions of central Mississippi and the adjoining districts of Alabama, Louisiana, and Arkansas, the precipitation during the latter part of the month was in some cases the heaviest recorded at the respective

stations. Rapid rises occurred in many of the local streams and much damage resulted to bridges, roads, crops, etc. Heavy falls also occurred in the Black Hills region of South Dakota and in portions of northeastern Oklahoma, considerable damage resulting from washing away of bridges, etc.

SNOWFALL.

Small amounts of snowfall occurred over the more northern districts of the eastern half of the country, and generally throughout the mountain regions of the west. In northern Michigan amounts exceeding 5 inches were recorded at several points, and some heavy falls were reported locally in the mountains of western Montana.

The large accumulation of snowfall in the high mountains of the west, especially in the central and northern districts, remained nearly intact, due to the prevailing cool weather. In the more southern districts, however, considerable melting occurred, and many of the rivers and streams in that section were at flood stages during the greater part of the month.

The large amount of snow in the mountains and its generally well-packed and frozen condition insure an abundant supply of water for the coming agricultural season.

HUMIDITY AND SUNSHINE.

The percentage of relative humidity was well above the normal over most of the territory between the Appalachian Mountains and the Mississippi Valley and over most of the northern portion of the country. From the middle Mississippi Valley westward to the Pacific, including the greater part of Texas and the southwest, there was a general deficiency in the relative humidity, amounting to from 10 to 15 per cent in portions of western Texas and northern California.

The percentage of sunshine was generally less than the average over nearly all districts east of the Rocky Mountains and over portions of the northern mountain and Plateau districts. Over the remaining districts west of the Rocky Mountains there was generally an abundance of sunshine, the percentage ranging from 80 to 95 per cent of the possible in portions of the southwest.

LOCAL STORMS.

A severe tornado occurred at Zephyr in Brown County, Tex., on May 30, resulting in the death of 28 persons, the injuring of many more, and the loss of much property.

Tornadoes occurred also in Kansas on the 5th, 14th, and 29th and in North Dakota also on the last-named date, resulting in the loss of several lives, the injuring of many persons, and considerable damage to property.

Average temperatures and departures from the normal.

Districts.	Number of stations.	Average temperatures for the current month.	Departures for the current month.	Accumulated departures since January 1.	Average departures since January 1.
		°	°	°	°
New England	12	53.6	— 0.9	+ 4.1	+ 0.8
Middle Atlantic	16	61.6	— 0.1	+10.9	+ 2.2
South Atlantic	10	69.0	— 0.8	+10.9	+ 2.2
Florida Peninsula*	8	76.2	+ 0.2	+14.2	+ 2.8
East Gulf	11	70.0	— 2.3	+ 6.4	+ 1.3
West Gulf	10	70.9	— 1.7	+ 7.7	+ 1.5
Ohio Valley and Tennessee	13	63.1	— 2.2	+ 7.2	+ 1.4
Lower Lake	10	55.0	— 2.2	+ 4.9	+ 1.0
Upper Lake	12	50.8	— 1.4	+ 4.0	+ 0.8
North Dakota*	9	51.5	— 1.9	— 3.9	— 0.8
Upper Mississippi Valley	15	59.4	— 2.5	+ 2.8	+ 0.6
Missouri Valley	12	59.8	— 2.2	+ 3.2	+ 0.6
Northern Slope	9	50.0	— 3.0	— 4.7	— 0.9
Middle Slope	6	60.6	— 2.4	+ 1.3	+ 0.3
Southern Slope*	7	68.5	— 1.3	+ 6.8	+ 1.4
Southern Plateau*	12	61.8	— 2.6	— 5.0	— 1.0
Middle Plateau*	10	52.4	— 2.4	+ 0.7	+ 0.1
Northern Plateau*	12	51.7	— 3.1	— 1.5	— 0.3
North Pacific	7	50.9	— 2.3	— 6.3	— 1.3
Middle Pacific	8	58.0	— 1.5	+ 1.3	+ 0.3
South Pacific	4	60.2	— 1.4	+ 0.4	+ 0.1

* Regular Weather Bureau and selected cooperative stations.

In Canada.—Director R. F. Stupart says:

The mean temperature of May was somewhat in excess of the average in northwestern New Brunswick, northern Manitoba, and in parts of northern and western Saskatchewan, and below the average in other portions of the Dominion; the largest negative departures, from 3° to 4°, occurred in the more central counties of Ontario and in British Columbia. These conditions following a rather cold April led to vegetation being backward in nearly all parts of the Dominion.

The rainfall of the month was somewhat excessive in Quebec and in southern and eastern Ontario and over most of Nova Scotia; also in Alberta and southern Saskatchewan, while in nearly all other districts there was a deficiency, which on Vancouver Island and in Ontario north of the Great Lakes was fairly pronounced.

Average precipitation and departures from the normal.

Districts.	Number of stations.	Average.		Departure.	
		Current month.	Percentage of normal.	Current month.	Accumulated since Jan. 1.
		Inches.		*Inches.*	*Inches.*
New England	12	2.83	85	— 0.5	+ 2.5
Middle Atlantic	16	3.58	100	0.0	— 0.6
South Atlantic	10	3.94	134	+ 1.0	— 2.5
Florida Peninsula*	8	4.67	121	+ 0.8	— 1.8
East Gulf	11	5.93	168	+ 2.4	+ 5.1
West Gulf	10	4.14	100	0.0	— 5.4
Ohio Valley and Tennessee	13	3.98	108	+ 0.3	+ 2.7
Lower Lake	10	3.82	122	+ 0.7	+ 4.0
Upper Lake	12	2.23	67	— 1.1	+ 1.2
North Dakota*	9	4.66	189	+ 2.2	+ 0.3
Upper Mississippi Valley	15	3.96	95	— 0.2	+ 2.9
Missouri Valley	12	4.81	114	+ 0.6	+ 1.1
Northern Slope	9	2.33	100	0.0	— 0.7
Middle Slope	6	3.25	84	— 0.6	— 1.5
Southern Slope*	7	2.09	66	— 1.1	— 4.0
Southern Plateau*	12	0.11	18	— 0.5	— 1.2
Middle Plateau*	10	0.49	41	— 0.7	— 0.3
Northern Plateau*	12	1.31	77	— 0.4	— 0.3
North Pacific	7	2.01	77	— 0.6	— 1.4
Middle Pacific	8	0.16	14	— 1.0	+ 6.9
South Pacific	4	T.	0	— 0.6	+ 5.2

* Regular Weather Bureau and selected cooperative stations.

Maximum wind velocities.

Stations.	Date.	Velocity.	Direction.	Stations.	Date.	Velocity.	Direction.
Amarillo, Tex.	8	52	nw.	Oklahoma, Okla.	14	50	s.
Block Island, R. I.	22	53	ne.	Pierre, S. Dak.	5	62	nw.
Do.	23	52	ne.	Pittsburg, Pa.	2	56	w.
Buffalo, N. Y.	1	52	sw.	Pocatello, Idaho.	5	53	sw.
Do.	2	60	sw.	Point Reyes Light, Cal.	5	50	nw.
Canton, N. Y.	2	50	sw.	Do.	8	68	nw.
Cheyenne, Wyo.	5	50	nw.	Do.	9	76	nw.
Chicago, Ill.	15	50	sw.	Do.	10	65	nw.
Columbus, Ohio.	8	50	nw.	Do.	11	68	nw.
Detroit, Mich.	1	54	w.	Do.	17	67	nw.
Duluth, Minn.	6	51	ne.	Do.	18	50	nw.
El Paso, Tex.	28	50	w.	Do.	19	71	nw.
Galveston, Tex.	26	60	sw.	Do.	20	68	nw.
Lewiston, Idaho.	4	52	w.	Do.	21	60	nw.
Lincoln, Nebr.	5	52	nw.	Do.	23	56	nw.
Memphis, Tenn.	9	56	nw.	Do.	25	62	nw.
Minneapolis, Minn.	6	50	w.	Do.	27	58	nw.
Modena, Utah.	27	56	sw.	Rapid City, S. Dak.	28	52	sw.
Mount Tamalpais, Cal.	4	51	nw.	Richmond, Va.	1	53	s.
Do.	8	58	nw.	Roswell, N. Mex.	8	50	n.
Do.	9	74	nw.	St. Paul, Minn.	6	50	nw.
Do.	10	68	nw.	Sioux City, Iowa.	1	56	nw.
Do.	20	72	nw.	Do.	5	51	nw.
Do.	21	71	nw.	Do.	6	63	nw.
Do.	26	52	nw.	Do.	11	53	s.
Do.	27	72	nw.	Do.	29	52	sw.
Do.	28	62	nw.	Springfield, Mo.	14	64	s.
Mount Weather, Va.	10	56	nw.	Tatoosh Island, Wash.	30	53	s.
Do.	11	51	nw.	Toledo, Ohio.	1	50	sw.
Nantucket, Mass.	22	57	ne.	Do.	15	50	sw.
Norfolk, Va.	1	56	sw.	Valentine, Nebr.	30	54	nw.
North Head, Wash.	29	50	se.	Vicksburg, Miss.	25	52	nw.
Do.	30	62	se.	Williston, N. Dak.	29	52	nw.